



NEVO+ 600 series

Installation Manual

PLEASE READ THIS INSTALLATION MANUAL CAREFULLY BEFORE INSTALLING THIS PRODUCT AND KEEP THIS MANUAL FOR FUTURE REFERENCE.

WARNINGS

HIGH VOLTAGE WARNING:

Dangerous voltages are present within the power supply. Covers may only be removed by qualified personnel when the power supply has been disconnected from the mains supply voltage for more than 3 minutes. Covers must be replaced and all screws secured properly before reconnecting to the mains voltage.

FUSING WARNING:

To ensure continued protection against risk of fire fuses must be replaced with the same type and rating of fuse. Replacements should be carried out by qualified personnel only.

SPECIFICATIONS

INPUT ELECTRICAL – NEVO+ 600

Parameter	Details	Min	Max	Units
AC Input Voltage	Nominally 100Vrms to 240Vrms	85	264	Vrms
AC Input Frequency		47	63	Hz
DC Input Voltage	Standard Medical	120 120	370 300	Vdc
Power Rating			600	Watts
Input Current	600 watt output at 120Vrms		6.5	Amps
Fusing	Fast acting		8	Amps

NOTES:

- NEVO+ 600 inputs can only be used with NEVO series output modules and must not be used for any other purpose.
- Use only a power source of the type indicated on the product label for the NEVO+ 600 inputs.
- For installation relating to UL60601-1 (Medical) a suitable fuse as described above must be provided in line with the Neutral inlet.
- The NEVO+ 600 input module is supplied with an integrated fan. Ensure that the inlet and outlet ventilation holes are not obstructed. Ensure there is adequate ventilation provided in the enclosure wherein or near which the power supply is mounted.

OUTPUT ELECTRICAL

Output	Vmin	Vnom	Vmax	Imax	Pmax	Ppk
1	1.5V	5V	7.5V	25A	125W	187.5W ⁽⁴⁾
2	4.5V	12V	15V	15A	150W	225W ⁽⁴⁾
3	9V	24V	30V	7.5A	150W	225W ⁽⁴⁾
4	18V	48V	58V	3.75A	150W	225W ⁽⁴⁾
5 (Dual)	5V	12V	15V	5A	75W (x2)	75W (x2)
6 (Dual)	1.8V	3.3V	5V	5A	25W (x2)	25W (x2)
7 (Dual)	1.8V/5V	3.3V/12V	5V/15V	5A	25W/75W	25W/75W

NOTES:

- NEVO output modules can only be used with NEVO 600 and NEVO+ 600 input modules and must not be used for any other purpose.
- Take care when removing or adding output modules from the NEVO+ 600 input so that components are not damaged in the process.
- When the output voltage is adjusted upwards, the output current must be decreased proportionally so that the unit does not exceed the Pmax average power rating as stated in the table above.
- Peak power up to Ppk is available for not more than 5 seconds at a maximum of 50% duty cycle. The maximum rated average power must not be exceeded. Please refer to the full datasheet and user manual for more information on using the Ppk feature.

ENVIRONMENTAL

Storage	Parameter	Details	Min	Max	Units
	Temperature		-40	85	°C
	Humidity	Relative, non condensing	5	95	%
	Altitude		-200	5000	Metres
Operation	Air Pressure		54	106	kPa
	Temperature	Full Power Derate input and all outputs at 2.5% / °C	-20 50	50 70	°C °C
	Humidity	Relative, non condensing	5	95	%
	Altitude		-200	3000	Meters
	Air Pressure		78	106	kPa
	Noise Level	Measured 1m from fan – No Load @ 25 °C		41	dBA
	Shock	3000 bumps at 10G (16ms) half sine wave			
Vibration 1.5G, 10 to 200Hz sine wave, 20G for 15min in 3 axes					

SAFETY

Parameter	Details	Min	Max	Units
Isolation Voltage	Input to Output		4000	Vac
	Input to Chassis		1500	Vac
	Output to Chassis		250	Vdc
	Output to Output		250	Vdc
Isolation Clearance	Primary to Secondary(Reinforced)	7		mm
	Primary to Chassis (Basic)	2.5		mm
Isolation Creepage	Primary to Secondary(Reinforced)	12		mm
	Primary to Chassis (Basic)	4		mm
Leakage Current	Standard: 250Vac, 60Hz, 25 °C		1500	uA
	Medical: 250Vac, 60Hz, 25 °C		300	uA

GENERAL INSTALLATION

Parameter	Details	Parameter	Details
Equipment class	I	Flammability rating	94V-2
Installation category	II	IP Rating	IP 10
Pollution degree	2	RoHS Compliance	Yes
Material group	IIIB (indoor use only)		

MECHANICAL

Parameter	Details
Size	77.7mm x 133.7mm x 41.0mm (all external dimensions ± 1.0mm)
Weight	400 grams + 60 grams per output module
Mounting	Bottom or Side mounting (See diagram details)

IMPORTANT INSTALLATION NOTES

This power supply is intended for use within equipment or enclosures which restricts access to authorised personnel only. The instructions in this manual and all warning labels on the product must be followed carefully.

SAFETY

The NEVO+ 600S is designed in accordance with safety requirements for UL60950-1, EN60950-1, IEC60950-1, CSA22.2 no. 60950-1 and LV Directive 2006/95/EC.

The NEVO+ 600M is designed in accordance with safety requirements for UL60601-1, EN60601-1, EN61010-1, IEC60601-1, IEC61010-1, CSA22.2 no 601-1 and LV Directive 2006/95/EC.

All power supplies must be installed correctly in a controlled environment which restricts access to any unauthorised personnel. Equipment and system manufacturers must protect service personnel against unintentional contact with the output terminals.

DERATINGS

Temperature - Input and output power must be derated by 2.5%/°C above 50°C.

Input Voltage - Input and output power must be derated by 0.95% / Vrms below 120Vrms (600W @ 120Vrms, 486W @ 100Vrms, 429W @ 90Vrms)

Always remember to take the appropriate deratings into consideration before specifying any power supply for an application. If in doubt contact Vox Power.

HAZZARDS

If series and/or parallel combinations of outputs exceed safe voltage and/or energy levels, the final equipment manufacturer must provide appropriate protection for both users and service personnel.

HEALTH AND SAFETY

To comply with section 6 of the health and safety at work act, a label that is clearly visible to service personnel must be placed on the final equipment, which warns that surfaces of the power supply may be hot and should not be touched when the product is operating.

FUSING

The power supply has internal single pole fusing in the L (Live) line.

SERVICING

The power supply contains no user serviceable parts. Repairs must be carried out by authorised personnel only. Contact Vox Power Ltd for further information.

APPROVAL LIMITATIONS – NORTH AMERICA

When this product is used with 180VAC–253VAC mains where no neutral is present, connect the two live wires to L (Live) and N (Neutral) on the input connector.

COOLING

For proper cooling of the power supply, the air intake and outlet must not be impeded. Allow 50mm clearance at both ends and position cabling appropriately.

EARTH TERMINAL MARKING

To comply with the requirements of UL60950-1, EN60950-1, IEC60950-1, CSA22.2 no. 60950-1, UL60601-1, EN60601-1, EN61010-1, IEC60601-1, IEC61010-1, CSA22.2 no 601-1 where the incoming wiring earth is intended for connection as the main protective earthing conductor and where the terminals for such a connection is not supplied on a component or subassembly such as a terminal block, the user shall add an appropriate label displaying a protective earth symbol in accordance with 60417-2-IEC-5019 directly adjacent to the terminal. The label should be durable and legible and should withstand the 15s rub test as per UL60950-1 section 1.7.15.

WARRANTY

Contact your sales agent or Vox Power for product repairs. See Vox Power standard terms and conditions for warranty conditions. Vox Power products are not intended for use in connection with life support systems, human implantations, nuclear facilities or systems, aircraft, spacecraft, military or naval missile, ground support or control equipment used for the purpose of guidance navigation or direction of any aircraft, spacecraft or military or naval missile or any other application where product failure could lead to loss of life or catastrophic property damage. The user will hold Vox Power harmless from any loss, cost or damage resulting from its breach of these provisions.

PRODUCT LABELS

NEVO+ 600M and NEVO+ 600S

The external product label contains information relevant to the power system. The label contains input voltage, maximum input current, input frequency, maximum output power, fuse rating and type, serial number, approvals and product part number in format NEVO+ 600□-□□□□-□□□.

NEVO OUTPUT MODULES

Each output module label contains information relevant to that particular output. The label contains voltage adjustment range, maximum output current, serial number, approvals and part number in format OP□.

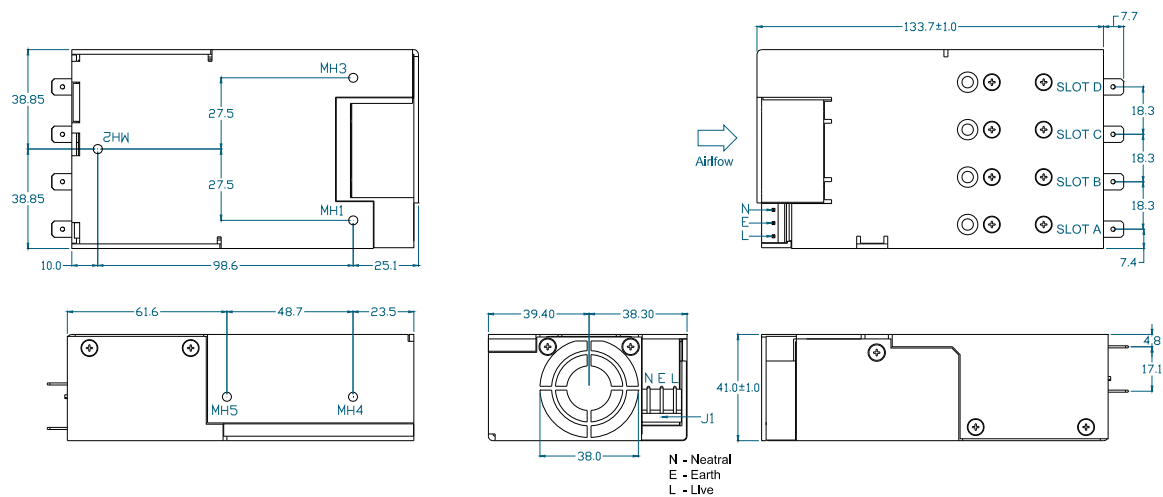
OTHER

- A label warning that external surfaces are hot during operation and that the unit should be allowed to cool down properly should be placed on the unit where such a label is clearly visible.
- The NEVO+ 600 range is designed to comply with EMC standards but it does not imply that the end system will comply.
- To prolong the life of the unit use in dust free environment.
- Units can be damaged during transit. Contact your sales agent or Vox Power and DO NOT apply power to the unit in case of transit damage
- Always use adequately sized cables and ensure good crimp connections. Use cable supports to minimise stress on connectors.
- Avoid excessive shock or vibration.

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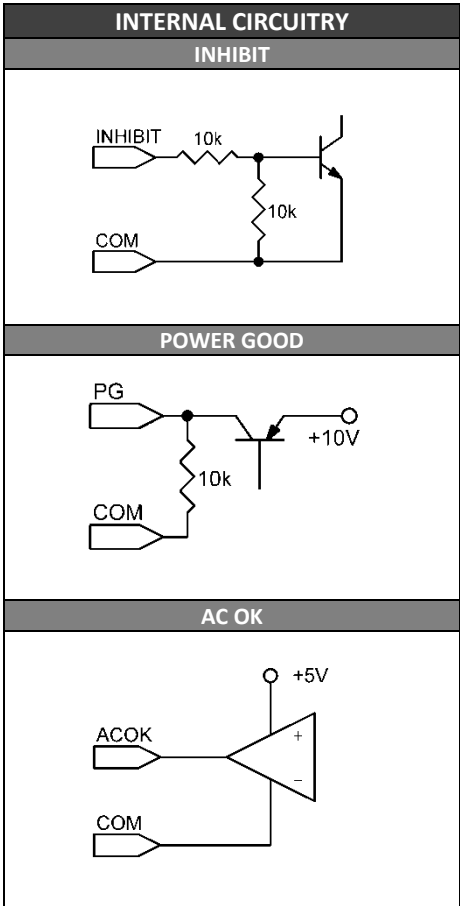
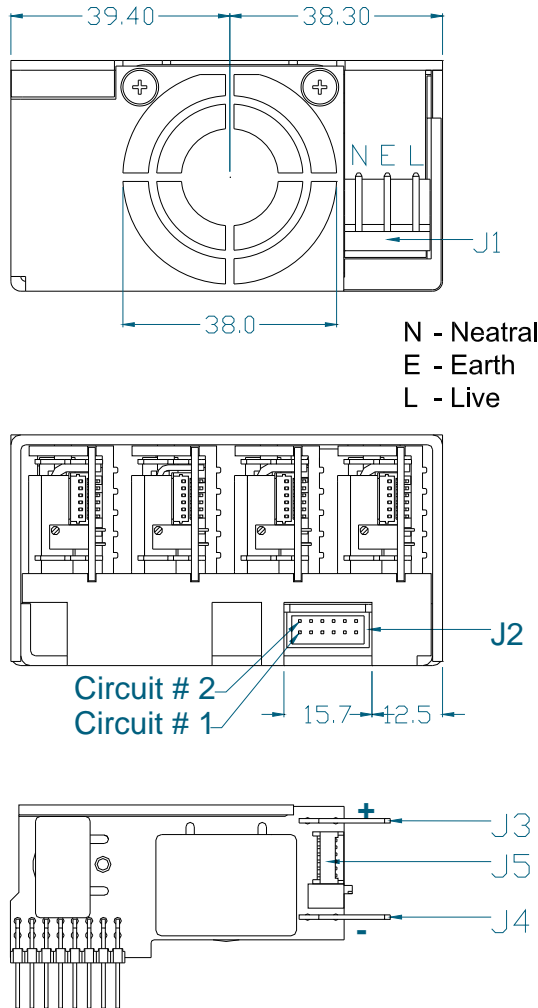
DIMENSIONS AND MOUNTING



Fixings	Details	Quantity	Type	Torque
Mounting	MH1, 2, 3, 4, 5 Mounting screws	Bottom – 3 Side – 2	M4 – Note: Maximum penetration depth is 4.00mm including chassis	1.50Nm
Outputs	Output Mounting screws	2 per Module	M3 x 5, Posi, CSK	0.75Nm
Cover	Top Cover Mounting screws	5	M3 x 5, Posi, CSK	0.75Nm
Fan	Fan Mounting screws	2	M3 x 24, Posi, CSK	0.75Nm

CONNECTORS AND PINOUTS

PINOUTS		
J1		
Circuit	Details	
1	Live	
2	Earth	
3	Neutral	
J2		
Circuit	Details	
1	PG	Slot A
2	Inhibit	
3	PG	Slot B
4	Inhibit	
5	PG	Slot C
6	Inhibit	
7	PG	Slot D
8	Inhibit	
9	Global Inhibit	
10	AC OK	
11	+5V 200mA Bias supply	
12	COM	
J3		
Positive Output		
J4		
Negative Output		
J5		
Circuit	Details	
1	- Sense	
2	+ Sense	
3	Voltage Control	
4	Current Control/Share/Out	
5	COM	
6	+5V 10mA Bias supply	

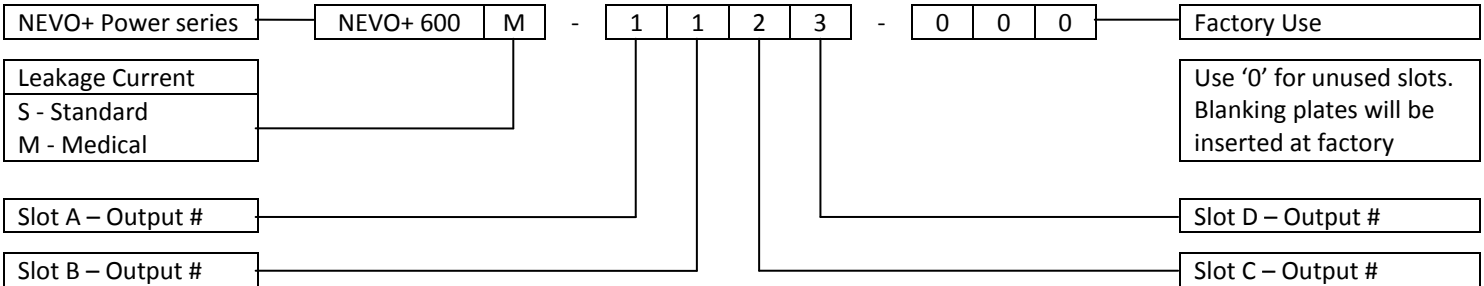


REF.	DETAILS	MANUFACTURER	HOUSING	TERMINAL
J1	Mains Input: 3 Way, 5.08mm with friction lock, 18-24AWG	Molex ⁽²⁾	010013036	8701031
J2	Global Signal: 12 Way, 2.00mm, 24-30 AWG	Molex ⁽²⁾	511101260	503948051
J3/J4 ⁽¹⁾	Output Power tab: Tab size 6.35mm x 0.80mm	Various ⁽²⁾		VARIOUS
J5	Output Signals: 6 Way, 1.25mm with friction lock, 28-32 AWG	Molex ⁽²⁾	1510210600	50058800

Notes:

1. Terminal and wire current rating must exceed maximum short circuit output current. E.g. Output 1 = 25A * 1.25 = 31.25A
2. Direct equivalents may be used
3. All cables must be rated 105 °C min, equivalent to UL1015

PART NUMBERING SYSTEM



When initially ordering non-nominal voltage settings add “ /Voltage” after each output # where a special voltage setting is required
E.g. If 3.30Vdc is required in slot B and all other slots require nominal voltages then use:

NEVO+ 600M – 1 – 1/3.30 – 2 – 3

The factory will then issue a 3 digit code for your specific configuration that can be used for all future orders of the same configuration
When ordering an input unit with no outputs inserted, simply order NEVO+ 600M or NEVO+ 600S

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